ipd4400P1mdlltsvdTES-10

Defense Information Infrastructure (DII)

Common Operating Environment (COE)

Software Version Description (SVD) for the Latitude-Longitude-Time (LLT) Observation Database (MDLLT) Segment Release 4.4.0.0 Patch 1 of the Tactical Environmental Data Server (TEDS) Component of the Navy Integrated Tactical Environmental Subsystem (NITES)

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Prepared for:
Naval Research Laboratory
Marine Meteorology Division
Monterey, CA

Prepared by:
Integrated Performance Decisions
Middletown, RI

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1 SCOPE

1.1 Identification

This Software Version Description (SVD) describes Patch 1 to the Latitude–Longitude–Time (LLT) Observation Database (MDLLT) segment, Version 4.4.0.0, of Tactical Environmental Data System (TEDS) component of the Navy Integrated Tactical Environmental Subsystem (NITES). The MDLLT is a DII COE *shared database* segment for the storage of METOC point observations. This software is designed to run under the Defense Information Infrastructure (DII) Common Operating Environment (COE) release 3.1 on a Hewlett-Packard computer running HP-UX 10.20.

1.2 System Overview

The software described in this document forms a portion of the TEDS component of NITES. On 29 October 1996, the Oceanographer of the Navy issued a Program Policy statement in letter 3140 Serial 961/6U570953, modifying the Program by calling for five seamless software versions that are DII COE compliant, preferably to level 5.

The five versions are:

- NITES Version I — The local data fusion center and principal METOC analysis and forecast system
- NITES Version II — The subsystem on the Joint Maritime Command Information System (JMCIS) or Global Command and Control System (GCCS) (NITES/Joint METOC Segment (JMS))
- NITES Version III — The unclassified aviation forecast, briefing, and display subsystem tailored to Naval METOC shore activities (currently satisfied by the Meteorological Integrated Data Display System (MIDDS))
- NITES Version IV — The Portable subsystem composed of independent Personal Computers (PCs)/workstations and modules for forecaster, satellite, communications, and Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance (IC4ISR) functions (currently the Interim Mobile Oceanographic Support System (IMOSS))
- NITES Version V — Foreign Military Sales (currently satisfied by the Allied Environmental Support System (AESS))

NITES I acquires and assimilates various METOC data for use by US Navy and Marine Corps weather forecasters and tactical planners. NITES I provides these users with METOC data, products, and applications necessary to support the warfighter in tactical operations and decision making. NITES I provides METOC data and products to NITES I and II applications, as well as other systems requiring METOC data, in a heterogeneous, networked computing environment.

The NITES I Concept of Operations and system architecture require that the METOC Database be distributed both in terms of application access to METOC data and products and in terms of physical location of the data repositories. The organizational structure of the database is influenced by these requirements, and the components of this distributed database are described below.

In accordance with DII COE database concepts, the METOC Database is composed of six DII COE-compliant *shared database* segments. Associated with each shared database segment is an Application Program Interface (API) segment. The segments are arranged by data type as follows:

Data Type	**Data Segment**	**API Segment**
Grid Fields	MDGRID	MAGRID
LLT Observations	MDLLT	MALLT
Textual Observations and Bulletins	MDTXT	MATXT
Remotely Sensed Data	MDREM	MAREM
Imagery	MDIMG	MAIMG
Climatology Data	Segments named by data type. To date, only DBDB-V segments (MDDBV and MADBV) have been released.	

A typical client-server installation is depicted in Figure 1-1 on the next page. This shows the shared database segments residing on a DII COE SHADE database server, with a NITES I or II client machine hosting the API segments. Communication between API segments and shared database segments is accomplished over the network using American National Standards Institute (ANSI)-standard Structured Query Language (SQL).

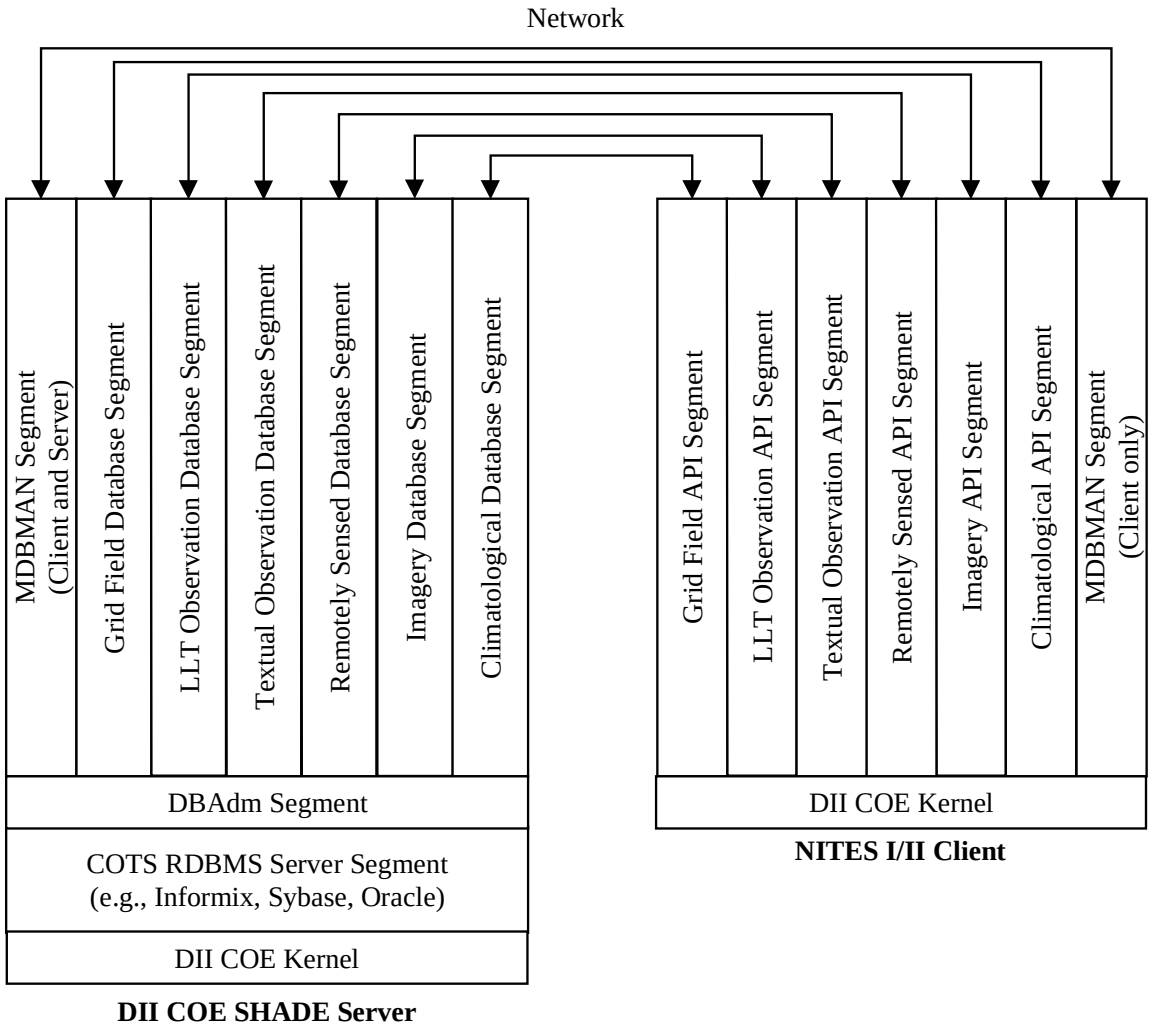

Figure 1-1. NITES METOC Database Conceptual Organization

The MDLLT segment deals with point observations. These include surface weather observations (hourlies, specials, synoptic observations, METAR reports, Terminal Aerodrome Forecasts (TAFs), etc.), upper air observations (e.g., radiosonde reports, aircraft observations), and ocean soundings (bathythermograph, sound velocity profiles, etc.). For upper air and ocean soundings, the database may also store data derived from the original soundings in the form of upper air profiles and ocean profiles.

1.3 Product Information

1.3.1 Product Qualification

Test and Evaluation (T&E) of the MDLLT 4.4.0.0 software were performed at the Integrated Performance Decisions (IPD) facility in Middletown, RI, prior to delivery of the software. T&E of Patch 1 were performed at Fleet Numerical Meteorology and Oceanography Center, Monterey, CA, prior to delivery of the patch.

1.3.2 Product Restrictions

IPD's intellectual property rights to deliverables defined in this document are covered by the copyright license under the clause in DFARS 252.227-7013 (Nov. 1995).

1.3.3 Product Dependencies

The MDLLT segment is hosted on the following hardware:

- Tactical Advanced Computer, TAC-3 (HP 750/755)/TAC-4 (HP J210)

The operating system requirements are:

- TAC-3/TAC-4: HP-UX 10.20

The kernel requirements are:

- Kernel 3.0.1.0 with patches through P5

The following software must be properly installed prior to loading the MDLLT segment:

- Appropriate operating system (as described above)
- Appropriate DII COE Kernel (as described above)
- DII COE Informix Connect Segment (INFXCN), version 1.0.1.0

2 REFERENCED DOCUMENTS

2.1 Government Documents

Unnumbered 30 September 1997	*Database Design Description for the Tactical Environmental Support System/Next Century [TESS(NC)] Meteorological and Oceanographic (METOC) Database*, Space and Naval Warfare Systems Command, Environmental Systems Program Office (SPAWAR PMW-185), Washington, DC
ipd4300mdlltipTES-10 9 October 1998	*Installation Procedures (IP) for the Latitude-Longitude-Time (LLT) Observation Database (MDLLT) Segment of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database*

2.2 Non-Government Documents

None.

3 VERSION DESCRIPTION

3.1 Inventory of materials released

All physical media and associated documentation for the MDLLT segment are listed below.

- MDLLT segment v4.4.0.0 (HP-UX) Patch Installation Tape (4-mm Digital Audio Tape (DAT) cartridge for TAC-3/TAC-4 hardware)
- MDLLT segment v4.3 series IP, dated 9 October 1998
- MDLLT segment v4.4.0.0 Patch 1 SVD, dated 30 June 1999.

3.2 Inventory of Software Contents

A list of all executables and environment files delivered is contained in Appendix A of this document.

3.3 Changes Installed

A list of changes installed since the Preliminary (Developer) Release of the MDLLT software is contained in Appendix B of this document.

3.4 Waivers

There are no waivers associated with this software.

3.5 Adaptation Data

There are no unique-to-site data contained in the MDLLT 4.4.0.0 release.

3.6 Installation Instructions

The MDLLT segment v4.3 series IP referenced in Section 2 of this document provides comprehensive installation instructions for the MDLLT segment. The fully installed segment occupies approximately 1.52 MB of disk space. The software requires a minimum of 128 MB of RAM, with 192 MB recommended.

3.7 Possible Problems and Known Errors

Known problems and errors with MDLLT software are listed in Appendix C of this document.

4 NOTES

4.1 Glossary of Acronyms

AESS	Allied Environmental Support System
ANSI	American National Standards Institute
API	Application Program Interface
COE	Common Operating Environment
DAT	Digital Audio Tape
DII	Defense Information Infrastructure
GCCS	Global Command and Control System
IC4ISR	Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance
IMOSS	Interim Mobile Oceanographic Support System
INFXCN	Informix Connect Segment
IP	Installation Procedures
IPD	Integrated Performance Decisions
JMCIS	Joint Maritime Command Information System
JMS	Joint METOC Segment
LLT	Latitude-Longitude-Time
MDLLT	LLT Observation Database Segment of the TESS(NC) METOC Database
METOC	Meteorology and Oceanography
MIDDS	Meteorological Integrated Data Display System
NC	Next Century
NITES	Navy Integrated Tactical Environmental Subsystem
PC	Personal Computer
PTR	Program Trouble Report

SQL	Structured Query Language
SVD	Software Version Description
T&E	Test and Evaluation
TAF	Terminal Aerodrome Forecast

Appendix A - List of Executables and Environment Files

A.1 File Structure for HP-UX Delivery

```
/h/MDLLT/MDLLT.P1:
drwxrwxr-x   2 sysadmin   COE        1024 Jun 29 20:35 Integ
drwxr-xr-x   2 sysadmin   COE        1024 Jun 30 18:26 Scripts
drwxrwxr-x   2 sysadmin   COE        1024 Jun 30 18:28 SegDescrip
drwxrwxr-x   2 sysadmin   COE        1024 Jun 30 18:26 data
drwxrwxr-x   3 sysadmin   COE        1024 Jun 30 18:26 install

/h/MDLLT/MDLLT.P1/Integ:
-rw-rw-r--   1 sysadmin   COE         106 Jun 30 18:27 VSOutput

/h/MDLLT/MDLLT.P1/SegDescrip:
-rw-r--r--   1 sysadmin   COE        1055 Jun 30 18:26 ReleaseNotes
-rw-r--r--   1 sysadmin   COE         198 Jun 30 18:26 SegInfo
-rw-r--r--   1 sysadmin   COE         553 Jun 30 18:26 FileAttribs
-rw-r--r--   1 sysadmin   COE           0 Jun 30 18:26 DEINSTALL
-rw-r--r--   1 sysadmin   COE         264 Jun 30 18:26 SegName
-rw-r--r--   1 sysadmin   COE          30 Jun 30 18:26 VERSION
-rwxr-xr-x   1 sysadmin   COE        1876 Jun 30 18:26 PostInstall
-rwxr-xr-x   1 sysadmin   COE         199 Jun 30 18:26 PreInstall
-rw-rw-rw-   1 sysadmin   COE         110 Jun 30 18:27 Validated

/h/MDLLT/MDLLT.P1/data:
-r--r--r--   1 sysadmin   COE      479012 Jun 30 18:26 mdllt_icao.txt
-r--r--r--   1 sysadmin   COE      800940 Jun 30 18:26
data/mdllt_stationid.txt

/h/MDLLT/MDLLT.P1/Scripts:
-r-xr-xr-x   1 sysadmin   COE        1221 Jun 30 18:26 .cshrc
-r-xr-xr-x   1 sysadmin   COE          86 Jun 30 18:26 .cshrc.MDLLT

/h/MDLLT/MDLLT.P1/install:
-r-xr-xr-x   1 sysadmin   COE        1335 Jun 30 18:26 install_mdllt
drwxrwxr-x   2 sysadmin   COE        1024 Jun 30 18:26 sql

/h/MDLLT/MDLLT.P1/install/sql:
-r-xr-xr-x   1 sysadmin   COE        1992 Jun 30 18:26 MDLLT_stationID_Scripts
-r--r--r--   1 sysadmin   COE        1606 Jun 30 18:26 mdllt_cds_scripts
-r--r--r--   1 sysadmin   COE         100 Jun 30 18:26 mdllt_icao.cmd
-r--r--r--   1 sysadmin   COE         104 Jun 30 18:26 mdllt_stationid.cmd
-rw-r--r--   1 sysadmin   COE          19 Jun 30 18:26 mdllt_create_file_inf
-r-xr-xr-x   1 sysadmin   COE        1993 Jun 30 18:26 MDLLT_icaoID_Scripts
```

Appendix B - Changes/Updates Since Preliminary Release

This release made the following changes:

Pri	PTR #	Summary
2	132	Block Station IDs in LLT database are invalid.
2	170	ASW Domain is not supported in current implementation of TEDS.
2	XL00010	MDLLT Station ID table is missing several entries and has some incorrect entries
3	124	The data file “station.data” contains an error. The longitude is –816, which is an invalid entry. It has been changed to –81.6 in the flat file. This change should be made in the database.
3	194	Upper air reports parts b and d do not have heights, need to change primary key from height to pressure.
3	195	Need to add station elevation to fixed station reports.
3	197	Buoy needs outer join.
3	206	Obs with negative time values are getting into the database
3	282	Short int is not big enough to handle horizontal visibility in meters.
3	73	Ship speed and direction need to be added to bathy, buoy, and synoptic reports.
4	156	Duplicate entries in the Station ID table.
4	294	METAR retrieval is too slow.

Appendix C - Known Problems and Errors

None.